S00p0608

09c250 "Tag/450

FIG. 1

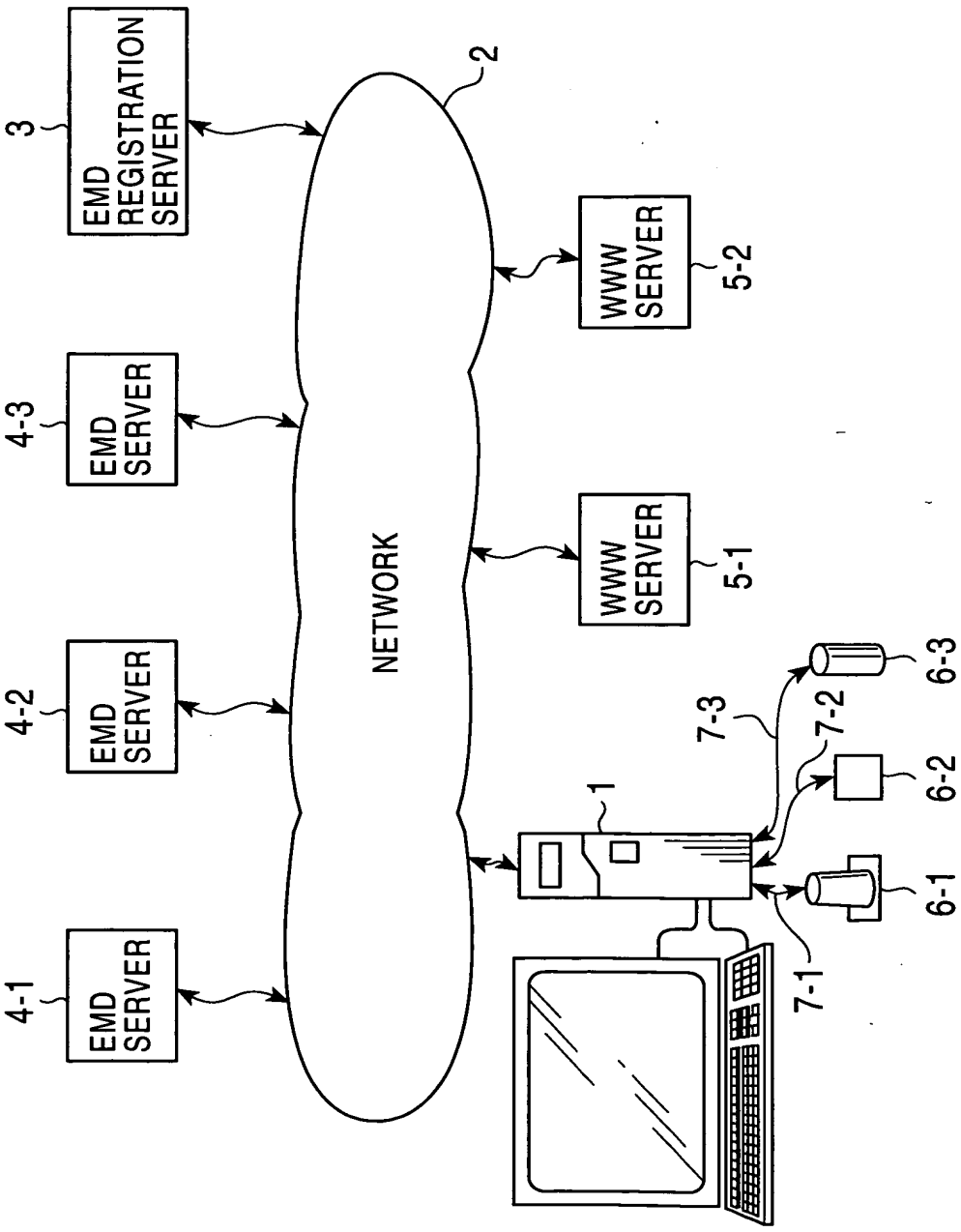

FIG. 2

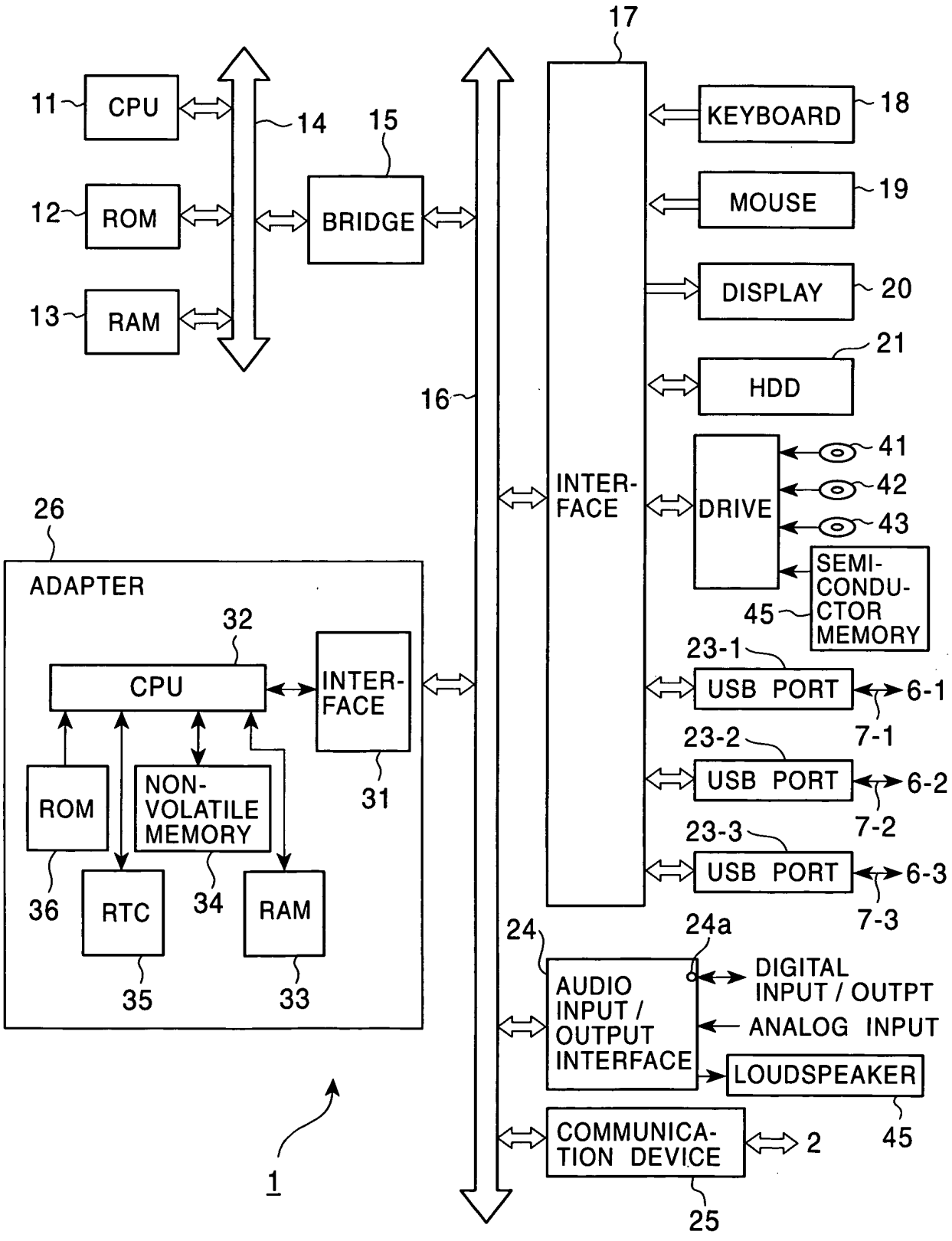
17
11
CPU
14
15
12
ROM
BRIDGE
13
RAM
16
KEYBOARD
18
MOUSE
19
DISPLAY
20
21
HDD
41
42
43
INTER-
FACE
DRIVE
SEMI-
CONDU-
CTOR
MEMORY
45
26
ADAPTER
32
CPU
INTER-
FACE
31
ROM
NON-
VOLATILE
MEMORY
36
RTC
34
RAM
35
33
23-1
USB PORT
6-1
7-1
23-2
USB PORT
6-2
7-2
23-3
USB PORT
6-3
7-3
24
24a
AUDIO
INPUT /
OUTPUT
INTERFACE
DIGITAL
INPUT / OUTPT
ANALOG INPUT
LOUDSPEAKER
45
COMMUNICA-
TION DEVICE
2
25
1

FIG. 3

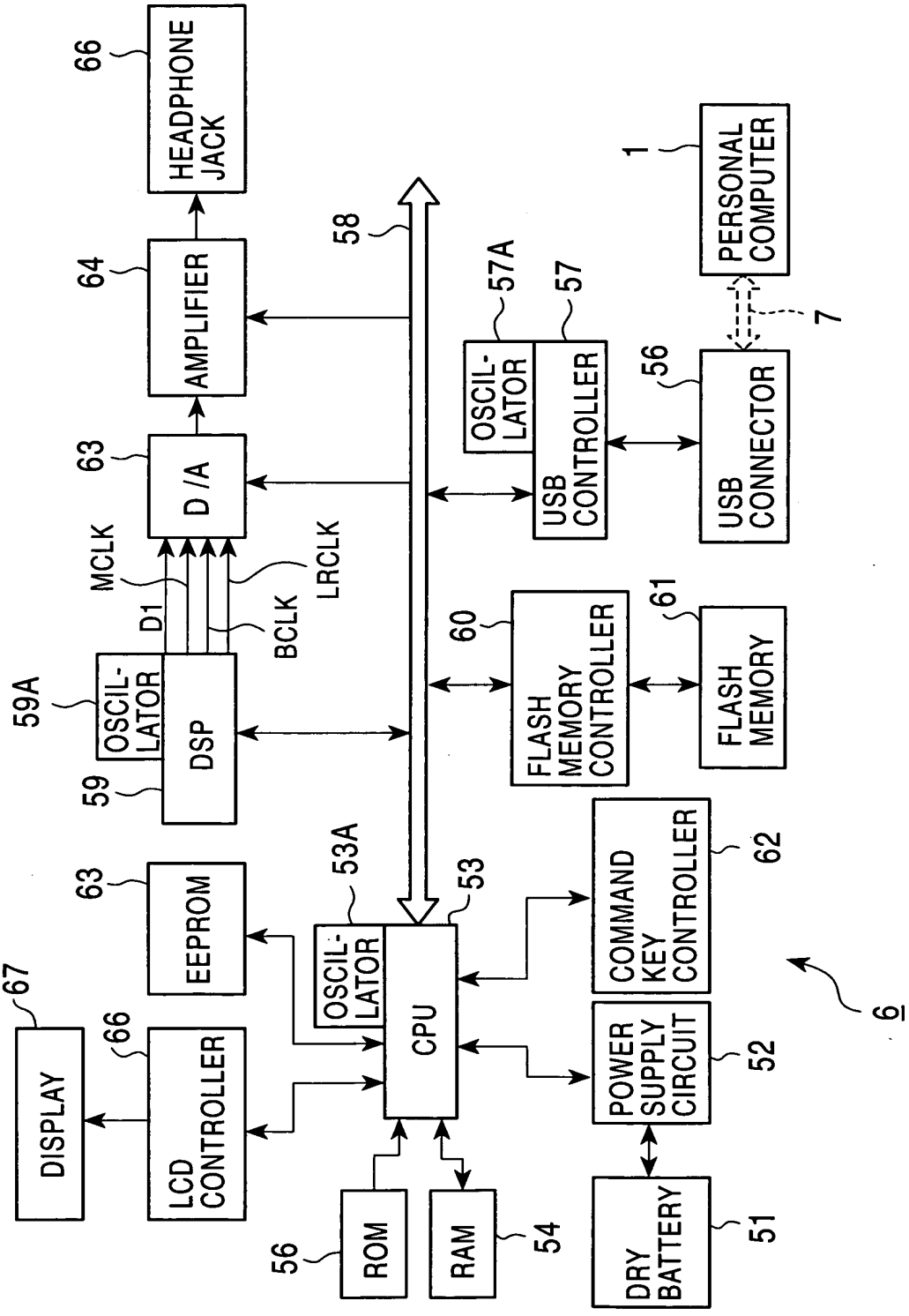
HEADPHONE JACK
66
AMPLIFIER
64
D /A
63
MCLK
D1
BCLK
LRCLK
OSCIL-LATOR
59A
DSP
59
58
OSCIL-LATOR
57A
USB CONTROLLER
57
USB CONNECTOR
56
PERSONAL COMPUTER
1
7
FLASH MEMORY CONTROLLER
60
FLASH MEMORY
61
EEPROM
63
OSCIL-LATOR
53A
CPU
53
COMMAND KEY CONTROLLER
62
DISPLAY
67
LCD CONTROLLER
66
POWER SUPPLY CIRCUIT
52
ROM
56
RAM
54
DRY BATTERY
51
6

FIG. 4

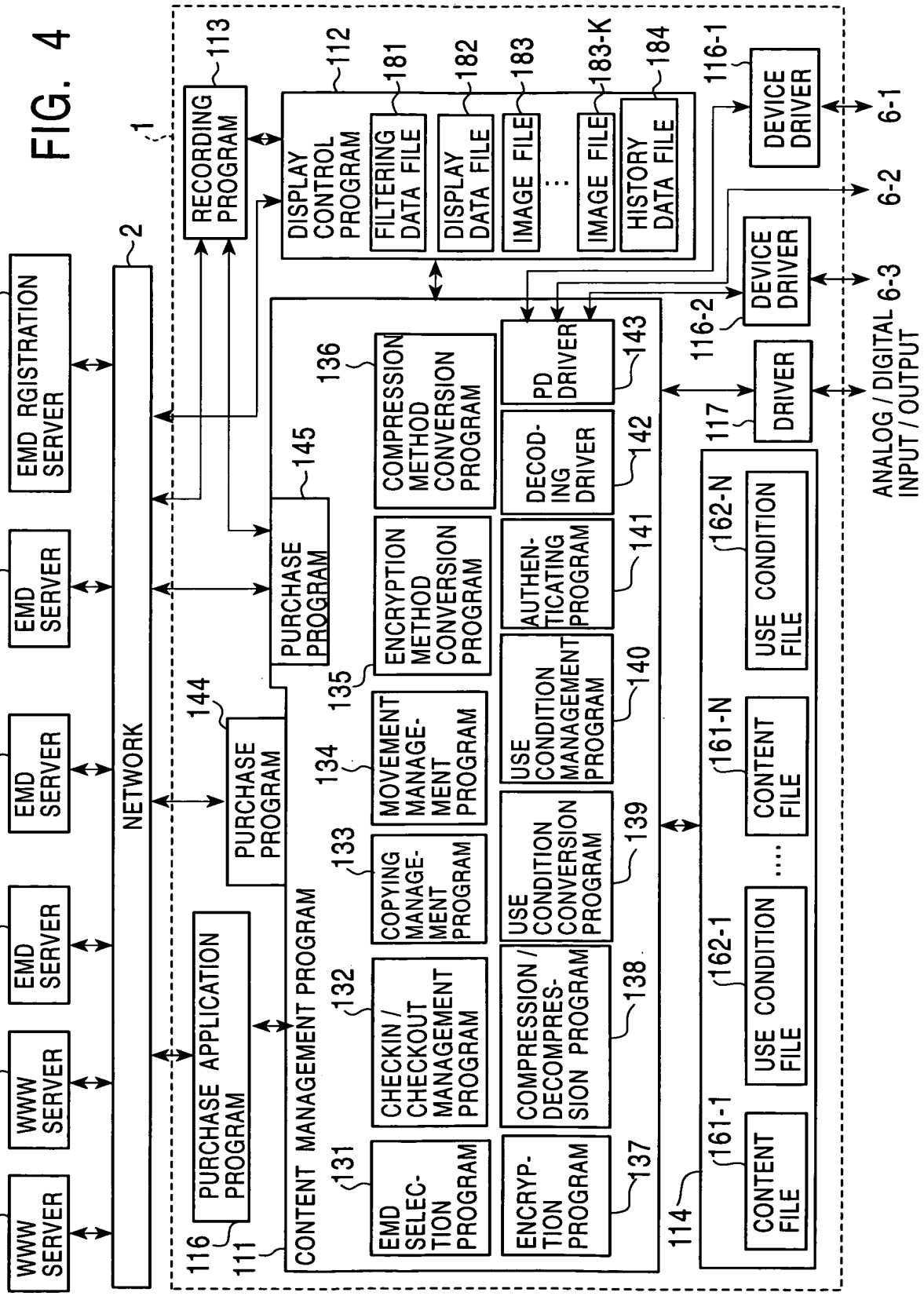
1
2
3
4-1
4-2
4-3
6-1
6-2
6-3
NETWORK
WWW SERVER
WWW SERVER
EMD SERVER
EMD SERVER
EMD SERVER
EMD RGISTRATION SERVER
DEVICE DRIVER
DEVICE DRIVER
DRIVER
ANALOG / DIGITAL INPUT / OUTPUT
111
CONTENT MANAGEMENT PROGRAM
112
DISPLAY CONTROL PROGRAM
113
RECORDING PROGRAM
114
116
PURCHASE APPLICATION PROGRAM
116-1
116-2
117
131
EMD SELEC-TION PROGRAM
132
CHECKIN / CHECKOUT MANAGEMENT PROGRAM
133
COPYING MANAGE-MENT PROGRAM
134
MOVEMENT MANAGE-MENT PROGRAM
135
ENCRYPTION METHOD CONVERSION PROGRAM
136
COMPRESSION METHOD CONVERSION PROGRAM
137
ENCRYP-TION PROGRAM
138
COMPRESSION / DECOMPRES-SION PROGRAM
139
USE CONDITION CONVERSION PROGRAM
140
USE CONDITION MANAGEMENT PROGRAM
141
AUTHEN-TICATING PROGRAM
142
DECOD-ING DRIVER
143
PD DRIVER
144
PURCHASE PROGRAM
145
PURCHASE PROGRAM
161-1
CONTENT FILE
161-N
CONTENT FILE
162-1
USE CONDITION FILE
162-N
USE CONDITION FILE
181
FILTERING DATA FILE
182
DISPLAY DATA FILE
183
IMAGE FILE
183-K
IMAGE FILE
184
HISTORY DATA FILE

FIG. 5

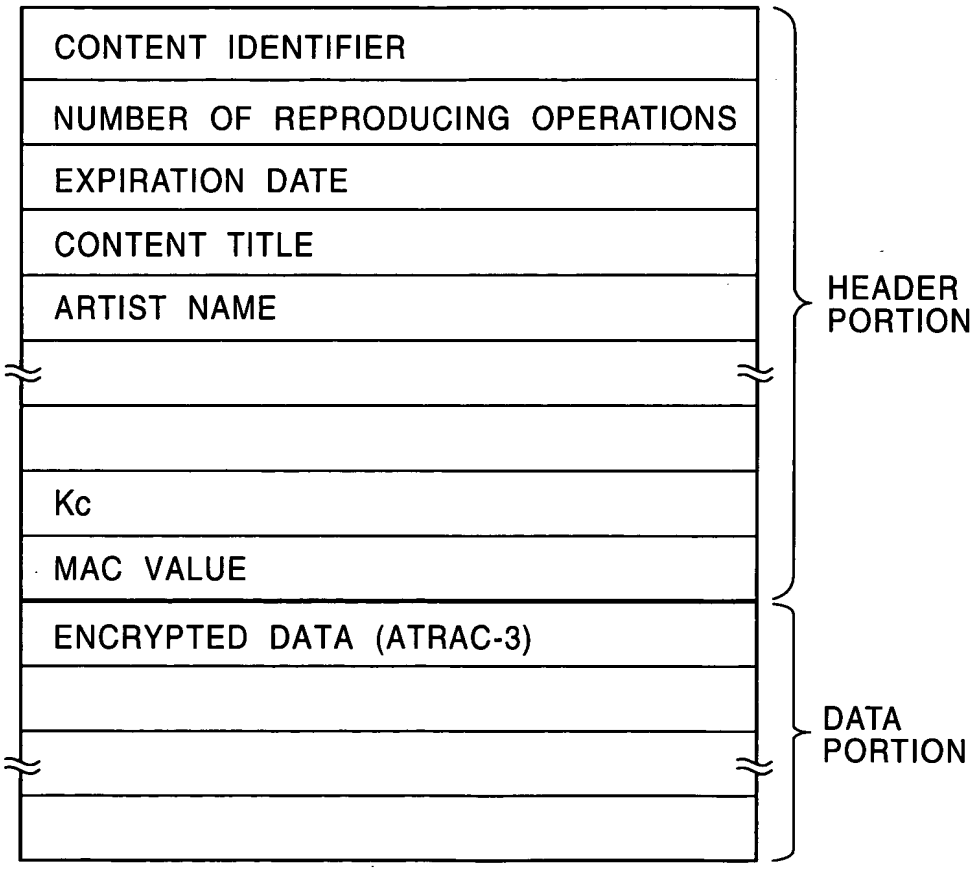

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FIG. 6

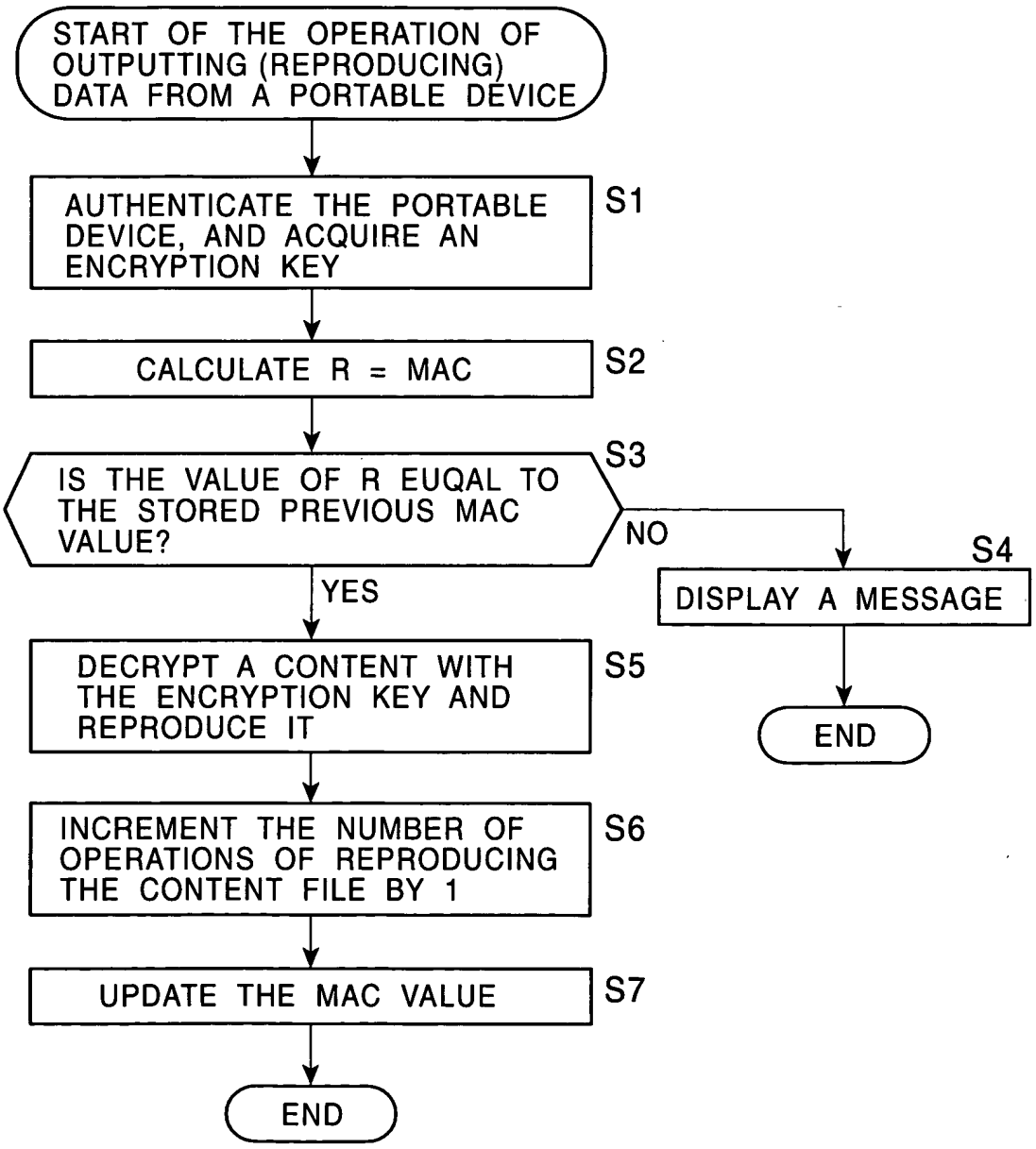

START OF THE OPERATION OF OUTPUTTING (REPRODUCING) DATA FROM A PORTABLE DEVICE
AUTHENTICATE THE PORTABLE DEVICE, AND ACQUIRE AN ENCRYPTION KEY
S1
CALCULATE R = MAC
S2
IS THE VALUE OF R EUQAL TO THE STORED PREVIOUS MAC VALUE?
S3
NO
YES
DISPLAY A MESSAGE
S4
END
DECRYPT A CONTENT WITH THE ENCRYPTION KEY AND REPRODUCE IT
S5
INCREMENT THE NUMBER OF OPERATIONS OF REPRODUCING THE CONTENT FILE BY 1
S6
UPDATE THE MAC VALUE
S7
END

FIG. 7

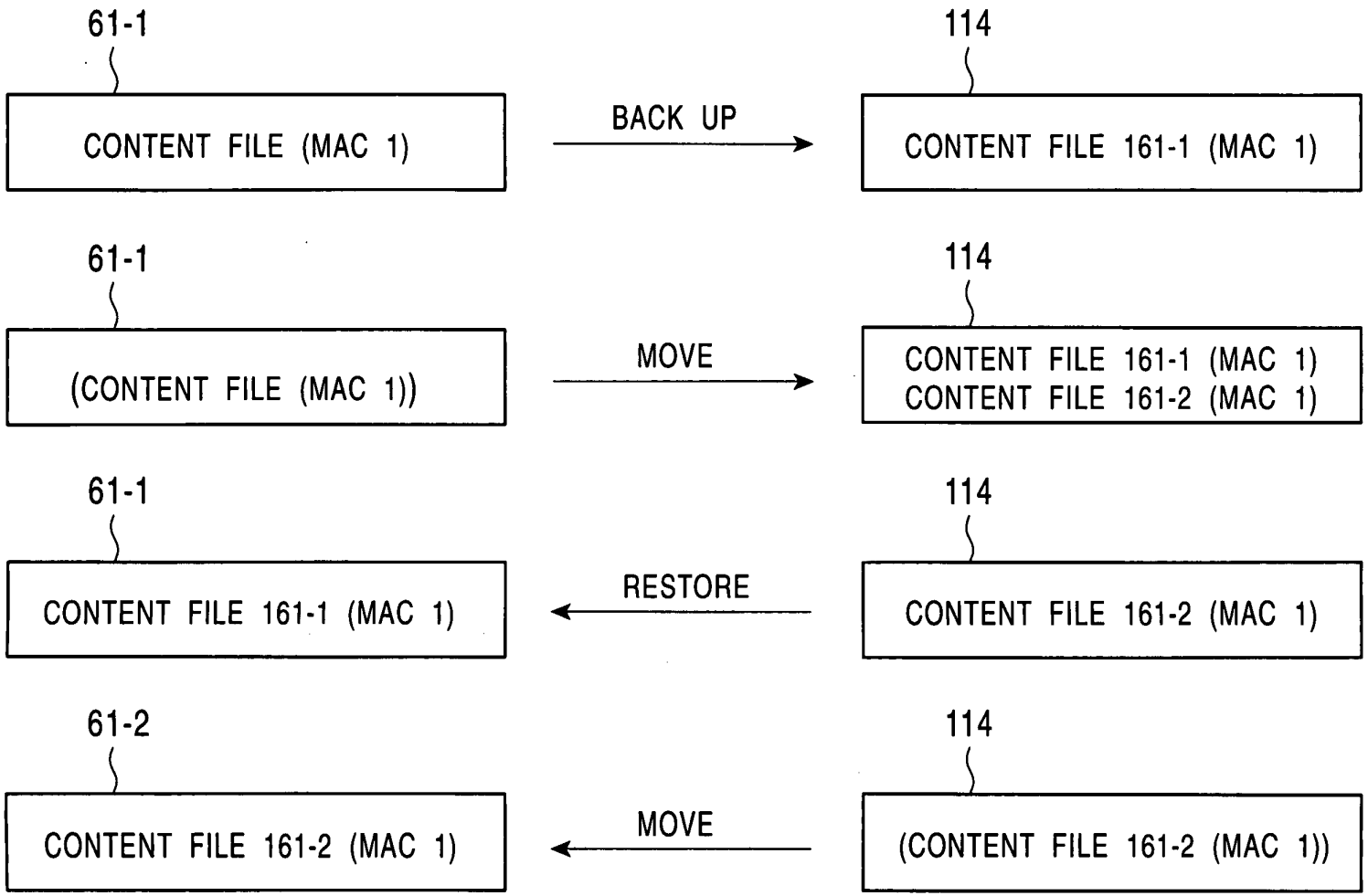

61-1
CONTENT FILE (MAC 1)
BACK UP
114
CONTENT FILE 161-1 (MAC 1)
61-1
(CONTENT FILE (MAC 1))
MOVE
114
CONTENT FILE 161-1 (MAC 1)
CONTENT FILE 161-2 (MAC 1)
61-1
CONTENT FILE 161-1 (MAC 1)
RESTORE
114
CONTENT FILE 161-2 (MAC 1)
61-2
CONTENT FILE 161-2 (MAC 1)
MOVE
114
(CONTENT FILE 161-2 (MAC 1))

FIG. 8A

	DEFECT (BAD) BLOCK	ALTERNATIVE BLOCK
0		
1		
2		
3		
4		
5		

FIG. 8B

seq 1
seq 2
seq 3
seq 4

FIG. 9

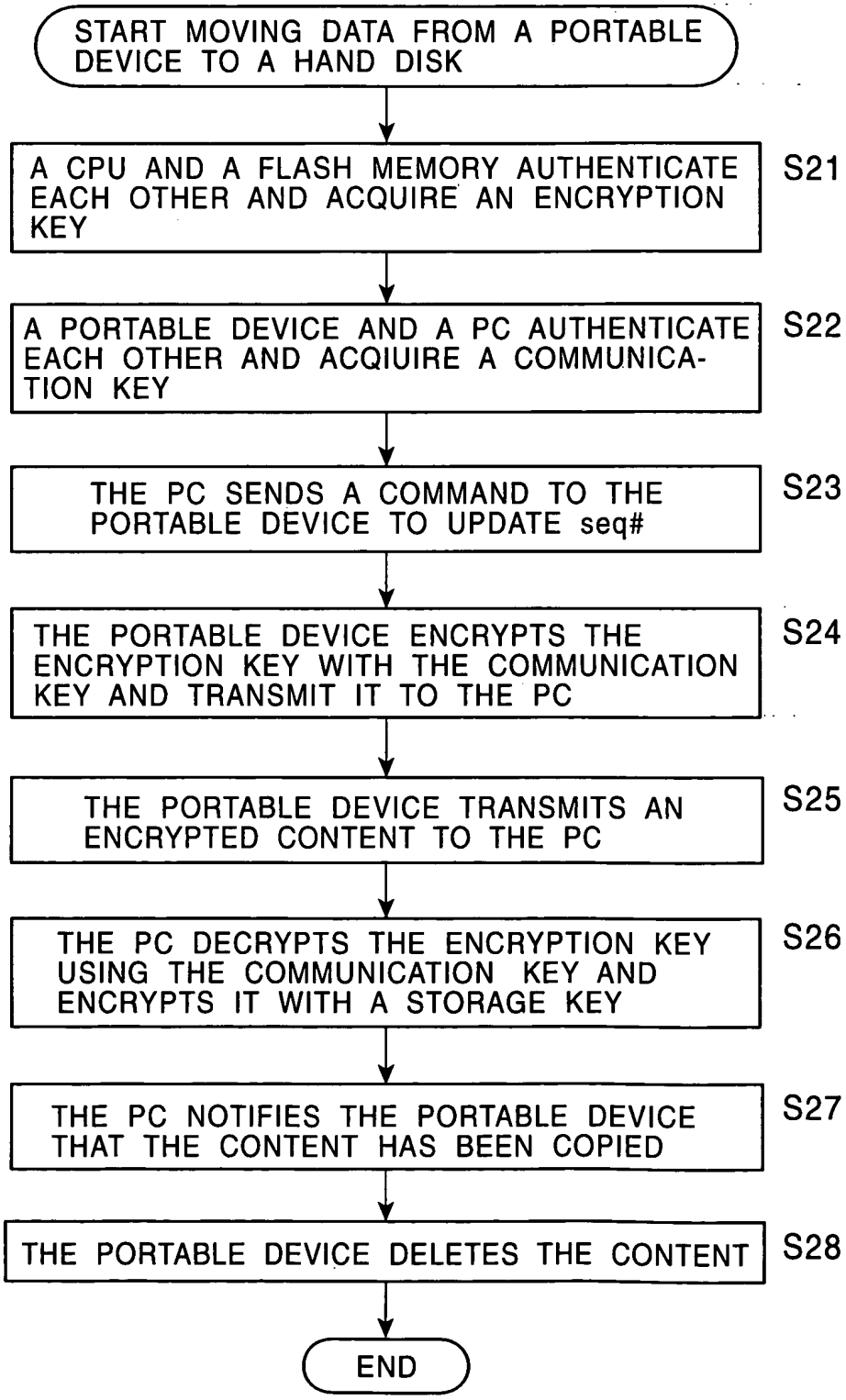
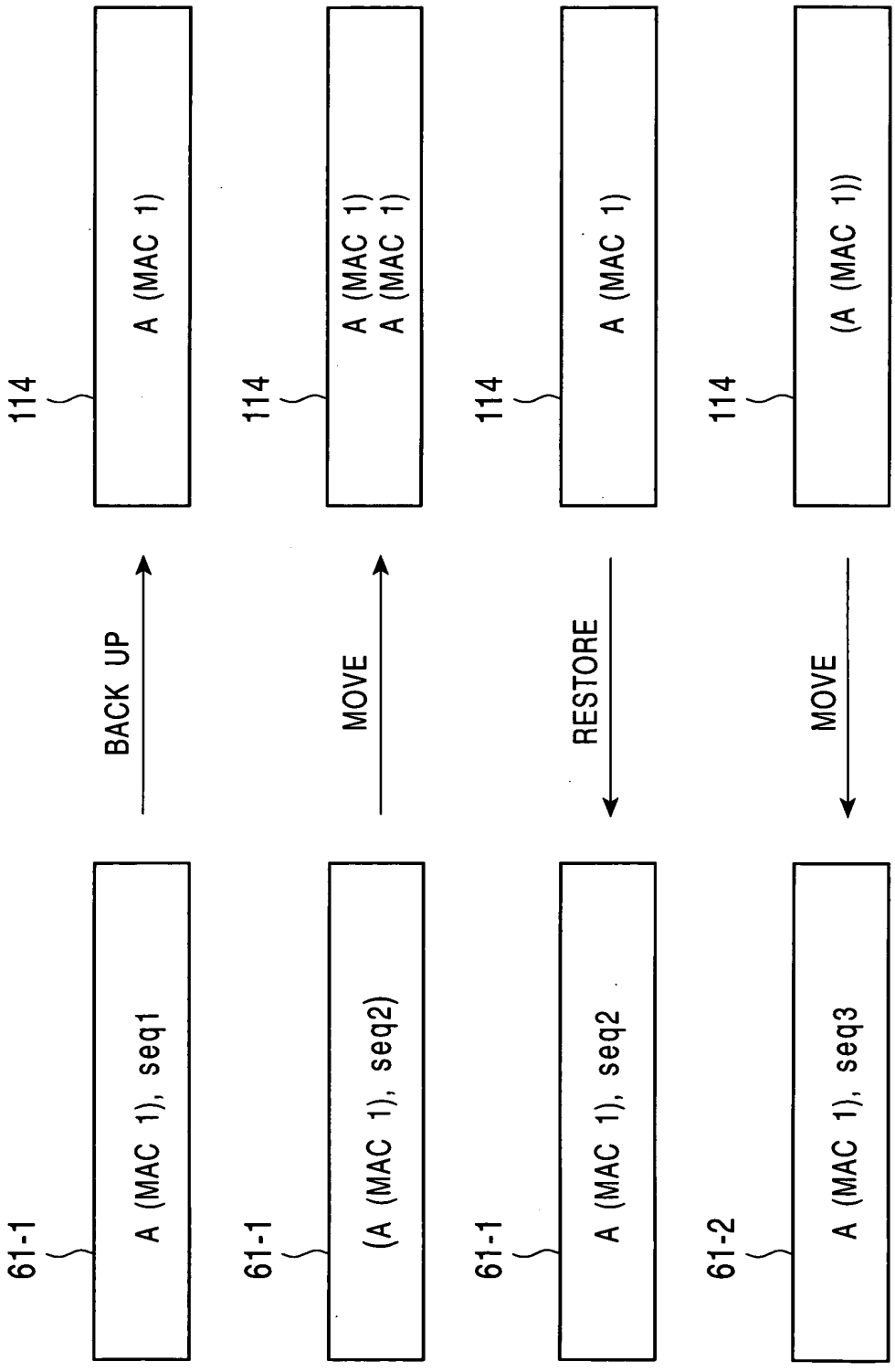

START MOVING DATA FROM A PORTABLE DEVICE TO A HAND DISK
A CPU AND A FLASH MEMORY AUTHENTICATE EACH OTHER AND ACQUIRE AN ENCRYPTION KEY
S21
A PORTABLE DEVICE AND A PC AUTHENTICATE EACH OTHER AND ACQIUIRE A COMMUNICATION KEY
S22
THE PC SENDS A COMMAND TO THE PORTABLE DEVICE TO UPDATE seq#
S23
THE PORTABLE DEVICE ENCRYPTS THE ENCRYPTION KEY WITH THE COMMUNICATION KEY AND TRANSMIT IT TO THE PC
S24
THE PORTABLE DEVICE TRANSMITS AN ENCRYPTED CONTENT TO THE PC
S25
THE PC DECRYPTS THE ENCRYPTION KEY USING THE COMMUNICATION KEY AND ENCRYPTS IT WITH A STORAGE KEY
S26
THE PC NOTIFIES THE PORTABLE DEVICE THAT THE CONTENT HAS BEEN COPIED
S27
THE PORTABLE DEVICE DELETES THE CONTENT
S28
END

FIG. 10


61-1
A (MAC 1), seq1
BACK UP
114
A (MAC 1)
61-1
(A (MAC 1), seq2)
MOVE
114
A (MAC 1)
A (MAC 1)
61-1
A (MAC 1), seq2
RESTORE
114
A (MAC 1)
61-2
A (MAC 1), seq3
MOVE
114
(A (MAC 1))